



**SEMATECH Official Dictionary
Revision 5.0**

Technology Transfer 91010441C-STD



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SEMATECH

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Abstract: This dictionary defines terms in the semiconductor industry. It is intended to provide a common SEMATECH language that improves communication within SEMATECH and throughout the SEMATECH community by providing and promoting a standard terminology. Some of the terms in this dictionary are specific to SEMATECH. This version (revision 5.0) also includes terminology from other industry organizations, namely the American Society of Mechanical Engineers (ASME), the American Society for Testing and Materials (ASTM), the Electronic Industries Association, the Institute of Electrical and Electronics Engineers, (IEEE), and Semiconductor Equipment and Materials International (SEMI). Sources are indicated at the end of each definition.

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Authors: Sheila Endres, Jackie Marsh

Approvals: Jackie Marsh, SEMATECH Standards Coordinator
Bill Swiss, Director, Critical Materials, Information, and Planning
Sheila Endres, Technical Information Transfer Team Leader



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SEMATECH Customer Service
2706 Montopolis Drive
Austin, TX USA
(512)356-3500

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projection

projection *n* : on a semiconductor package (plastic or ceramic), leadframe, or preform, an irregularly raised portion of the surface indigenous to the parent material. [SEMI G61-94] Contrast **burr**, **foreign material**, and **fin**.

proof pressure *n* : in a mass flow controller, the maximum gas pressure the device may be subjected to without permanent damage. Some adjustment may be necessary to make it meet its specified performance when returning to normal operating pressure. [SEMI E28-92]

protective clothing *n* : articles of apparel to prevent gases, vapors, liquids, and solids from contacting the skin and to prevent them from being inhaled or ingested. This clothing includes self-contained breathing apparatus. [SEMATECH]

protrusion *n* 1 : in the manufacture of plastic semiconductor packages, the plastic excesses that remain after normal molding, deflashing, trimming, and singulation processing. [SEMI G14-88] Also called *parting line protrusions or intrusions*. 2 : a surface defect on molded packages that consists of parent material. [SEMATECH] Also called *top or bottom protrusions*. Also see **bubble**, **blister ceramic**, **blister metal**, and **projection**. 3 : the dambar section of a leadframe (tab) that remains after dambar trimming when the trimming punch is not totally in line with the lead shoulder by design or misalignment. [SEMATECH] Also called *lead shoulder protrusions or intrusions* and *shoulder width intrusions*.

proximity X-ray *n* : a lithography method using X-ray radiation through a mask close to, but not touching, the resist-coated surface of a silicon wafer. [1994 National Technology Roadmap for Semiconductors]

PSM : see **phase shifting mask**.

psychotropic *adj* : acting on, or influencing, the activity of the mind. [SEMATECH]

PTC : see **post-process treatment chamber** or **pre-process treatment chamber**.

p-type *adj* 1 : describes a semiconductor material that has positively charged conductivity (a deficiency of electrons). [SEMATECH] 2 : describes a variety of semiconductive material in which the majority current carriers are holes, formed when acceptor impurities are incorporated into the crystal structure in small concentrations. [ASTM F1241]

pullback *n* : on a semiconductor package, the linear distance between the edge of a cavity cut into a layer of ceramic and the first measurable glass or metallization layer interface coated onto the top surface of that layer. The total pullback may be the result of the high temperature processing required to manufacture the package or to coat the surface. It may also be the result of design considerations. [SEMI G61-94]

pure water *n* : water suitable for use in semiconductor processing because of the very small level of impurities. Resistivity in pure water is high because the conductive impurities are at a low level. [SEMATECH]

purge gas inlet (PGI) valve *n* : a valve dedicated to the introduction of purge gas into a purge manifold. [SEMI Chemicals/Gases, Vol. 1, 1990 (no longer in print)]

purge manifold *n* : a piping/valving system designed to replace an undesirable gas in a piping system or vessel with a desirable gas by venting the undesirable gas and subsequently introducing the desirable gas. [SEMI Chemicals/Gases, Vol. 1, 1990 (no longer in print)]